

# Annual Report for Academic Year 2007-2008

## Department of Mathematics and Statistics Student Learning Outcomes Assessment for BS and BA Degrees in Mathematics

INTENDED OUTCOMES OBJECTIVES	ASSESSMENT CRITERIA	IMPLEMENTATION PROCEDURES (what, when, who)
1) Our curriculum will be comparable to national standards.	Compare our program to University of Washington, University of Wyoming, and University of North Dakota.	The math assessment committee will compare the curriculum at UAF to that of the three specified institutions (all state research universities) every three years and will include their findings and recommendations in the annual assessment report.

**Status:** The math assessment committee did not compare curricula this academic year. This was last done as part of our department's self assessment in 2005-2006.

2) Our students will master a core of mathematical concepts comparable with that of other institutions.	All majors will be required to take the ETS Major Fields Test in Mathematics.	Every spring, the instructor of Math 490, a required course for all math majors, will require all students to take the Major Fields Test in Mathematics. The results will be summarized by the assessment committee in the annual report the following spring.
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**Status:** Last year two students took the Math Fields Test in Mathematics. On a scale of 120 – 200, these students earned scores of 169 and 190 (75 and 90 percentiles). The table below summarizes the mean percent correct by topic.

Topic	Mean Percent Correct
Calculus	40
Algebra	54
Routine	52
Nonroutine	54
Applied	45

This year six students took this test as part of the Math 490 course.

<p>3) Our students will have the opportunity to develop the necessary skills to achieve their career goals in mathematics.</p>	<p>A) Exit survey B) Alumni survey</p>	<p>A) Every spring, the instructor of Math 490, a required course for all math majors, will give all students an exit survey at the end of the course. The results will be summarized by the assessment committee in the annual report the following spring.</p> <p>B) Every May, alumni surveys will be sent to all students who graduated with a degree in mathematics two years prior. The returned surveys will be summarized by the assessment committee in the annual report the following spring.</p>
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**Status:** Exit surveys were distributed in Math 490 in spring 2007 (2 surveys) and in spring 2008 (6 surveys). In general, majors are quite pleased with the undergraduate program. They rated the quality of instruction very highly (excellent or very good), though several students commented that Math 314 Linear Algebra was not challenging or theoretical enough.

Students appreciated the diversity of courses in the major, but would like to see more electives offered. The Department of Mathematics and Statistics has had trouble covering courses (both service and major courses) because of an insufficient number of faculty. Faculty agree that more electives should be offered, and hope to be able to round out the curricular offerings once new faculty members are hired.

A specific issue that several students raised was about the possibility of expanding the Linear Algebra offerings. One idea was to have two such courses: one for majors with an emphasis on mathematical ideas and a second for those students who are not mathematics majors but who may need to understand solving systems of linear equations for their studies. These suggestions are all good ones, and the Department has been discussing revamping the linear algebra course for some time.

The overall assessment is that the Department is training its majors well. The only budget implication of this review is that the Department suffers from an inadequate number of faculty so that class sizes in service courses can be quite large and majors have too few opportunities to take electives.

<p>4) Students will gain a broad background in liberal arts, fine arts, science, and ethics.</p>	<p>University core requirement fulfilled</p>	<p>Checked automatically by graduation office. These classes are separately assessed at the University level.</p>
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**Status:** Graduates are necessarily fulfilling the core requirements and therefore gain exposure to a diverse collection of academic pursuits.

5) We will monitor the effectiveness and implementation of our program requirements.	Transcript check of recent graduates	Every Spring the chair of the department will review the transcripts of students graduating with degrees in Mathematics and communicate any problems or surprises to the assessment committee.
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**Status:** After examining the transcripts of recent graduates, the chair of the department, John Rhodes, reports that there are no problems or surprises. Overall, student grades in mathematics seem to be in line with other UAF departments. One graduate spent a year at a state university in Washington and earned grades higher than at UAF, giving some indication we have less problem with grade inflation than many peer institutions.